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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/090,861	03/05/2002	Silke Goronzy	450117-03754	5894

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FROMMER LAWRENCE & HAUG  
745 FIFTH AVENUE- 10TH FL.  
NEW YORK, NY 10151

EXAMINER

STORM, DONALD L

ART UNIT PAPER NUMBER

2654

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/090,861

Applicant(s)

GORONZY ET AL.

Examiner

Donald L. Storm

Art Unit

2654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 August 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,4-7 and 9-19 is/are allowed.
- 6) ☒ Claim(s) 20 is/are rejected.
- 7) ☒ Claim(s) 2,3 and 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### *Claim Informalities*

2. Claim 2 is objected to under 37 CFR 1.75(a) because the meaning of the phrase "said step of adapting" (line 1) needs clarification. Although claim 1 recites an adapted CL or dictionary, no step of adapting was previously recited. It may be unclear as to what element this phrase refers. To further timely prosecution and evaluate prior art, the Examiner has interpreted this phrase to be --a step of adapting --.

3. Claim 3 is objected to under 37 CFR 1.75(a) because the meaning of the phrase "said step of determining and/or generating" (lines 1-2) needs clarification. Although claim 1 recites a determined and/or generated set of rules, no step of determining and/or generating was previously recited. It may be unclear as to what element this phrase refers. To further timely prosecution and evaluate prior art, the Examiner has interpreted this phrase to refer to --a step of determining and/or generating--.

4. Claim 8 is objected to for the same reasons as claim 3 because the limitations are recited using obviously similar phrases.

5. Claim 8 is objected to under 37 CFR 1.75(a) because the meaning of the phrase "said current speaker" (line 5) needs clarification. Because no two current speakers (claim 1 and claim 8) were previously recited, it may be unclear as to what element this phrase refers. To further timely prosecution and evaluate prior art, the Examiner has interpreted the occurrence of the phrase "a current speaker" in claim 8 to be --said current speaker--, referencing to claim 1.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 20 is rejected as failing to define the invention with the clarity required by 37 CFR 1.75(a). Because it is written in dependent form, claim 20 must be construed to incorporate by reference all limitations of claim 1, to which it refers. Claim 20 optionally includes the steps of claim 1 when it (probably claim 1) is executed on a computer. As written, claim 20 could appear to be attempting to claim only the step limitations of its parent claim, without the additional limiting subject matter. One example of additional limiting subject matter of claim 1 applies to the step of “projecting said current pronunciation (CP)”. Part of the addition subject matter is found there as “into said pronunciation space”, and this additional subject matter is extended to other parts of the claim by the antecedent language “said”. For this exemplary part of claim 1, is claim 20 attempting to claim only the limitation of “projecting said current pronunciation (CP)”?
- The treatment here of this particular example can also be applied to the other subject matter of claim 1. The Applicant should cancel the claim or amend the claim to further limit the parent claim with the clarity required by 37 CFR 1.75(a). To clearly claim only the steps as limitations, the Applicant should rewrite the claim in independent form.

9. Regarding claim 20, the phrase “steps thereof” (line 3) lacks unambiguous antecedent basis in the claim. In the claim, the word “thereof” can point to steps of either claim 1, or of the method

for recognizing speech, or of the computer program means, or of the computer program product.

An artisan is unable to determine which steps from which possible source of steps define the definite scope of claim 20.

10. Regarding claim 20, the phrase “it is executed” (line 3) lacks unambiguous antecedent basis in the claim. In the claim, the word “it” can point to either claim 1, or to the method for recognizing speech, or to the computer program means, or to the computer program product. An artisan is unable to determine which of these is executed in claim 20. Note also that in the alternate subject matter of recognizing speech according to the steps thereof, the plural “steps” cannot provide an appropriate antecedence for the singular “it”; however, a computer typically executes steps to achieve a particular functionality.

11. Regarding claim 20, joining the final two phrases “a computer” and “a digital processing means” by a comma is unclear. This subject matter would appear to be a list of items, but it does not display convention grammatical construction. An artisan aware of the typical grammatical construction of a list of items may be in doubt as to whether the list and the claim are complete.

### ***Claim Rejections - 35 USC § 101***

12. The following is a quotation of 35 U.S.C. 101:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

13. Claim 20 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

14. Claim 20 is not limited to a physical medium. The computer program product of claim 20 may be merely an arrangement of data, namely a listing of instructions of a computer program. Functional data alone is not statutory because it is none of a useful process, machine, manufacture, nor composition of matter. A list of instructions comprises only functional descriptive material. The description of instructions is not a physical article, nor is it a statutory process, as it is not acts being performed. Instructions, even when encoded on a computer-readable medium, are not of themselves statutory subject matter because it is none of a useful process, machine, manufacture, or composition. The computer-readable media permits an algorithm to electrically change a general purpose computer into a special purpose machine by activating electrical paths and deactivating other paths.

The claimed computer program product broadly includes computer program instructions. Being only a structure of data, without physical structure, it is none of a useful process, machine, manufacture, nor composition of matter. All claim limitations have been considered, and the claimed computer program product has been found nonstatutory as a mere arrangement of data.

#### ***Allowable Subject Matter***

15. Claims 1, 4-7, and 9-19 are allowed. Claims 2, 3, and 8 would be allowable as depending from an allowable base claim if rewritten to overcome any objections or rejections under 35 U.S.C. 112, especially as appearing in this Office action.

#### ***Response to Arguments***

16. The prior Office action, mailed May 5, 2005, objects to the specification and claims, and rejects claims under 35 USC § 112 and § 103, citing Larkey and Nitta. The Applicant's arguments and changes in AMENDMENT PURSUANT TO 37 C.F.R. 1.121, filed August 5, 2005, have been fully considered with the following results.

17. With respect to objection to the specification as lacking proper definition for Eigenpronunciation, the definition can be found as the Applicant says, and it supports the subject matter of claims 5-6. Accordingly, the objection is removed.

18. With respect to objection to the claims as dependent upon a rejected base claim, the base claims have been allowed. Accordingly, the objections are removed.

19. With respect to objection to those claims needing clarification, the changes entered by amendment provide clear descriptions of the claimed subject matter. Accordingly, the objections are removed. Please see new grounds of objection.

20. With respect to rejection of claims under 35 USC § 112 as being indefinite, the changes entered by amendment provide clear descriptions of the claimed subject matter. Accordingly, the rejections are removed.

21. With respect to rejection of claims under 35 USC § 103, the changes entered by amendment include calculating distance values with respect to Eigenpronunciations (sets of pronunciation rules).

The reference Nitta does not explicitly describe that limitation. In the reference Nitta, the eigenvectors make up only one set of templates; an eigenvector may be chosen by the similarity calculation, but not a set of eigenvectors. The whole structure and interaction expressed by the combination of all limitations is not made obvious compared to the prior art of record for the whole invention of the claims, particularly with choosing a set of pronunciation rules which correspond to a set that is assigned a lowest distance. Accordingly, the rejections are removed. The Applicant's assertions with respect to the references have been considered, but they are moot in view of the new claim element.

### **Conclusion**

22. The following references here made of record are considered pertinent to applicant's disclosure:

S. M. Witt and S. J. Young, "Bilingual Model Combination for Non-Native Speech Recognition,"

Proc. Inst. of Acoust. Conf on Speech and Hearing, vol. 20, part 6, 1998, pp. 91-98

describes adapting intonation patterns to a specific accent, hesitations, and

mispronunciations by phoneme mapping between two languages.

'Construction of Markov Word Models for Computer Recognition of Continuous Speech,' IBM

Technical Disclosure Bulletin, vol. 36, iss. 11, November 1993, pp. 665-668 describes an

eigenspace of phonetic phonological rules for word pronunciation, projecting training

speech, and iterating to train word HMM baseforms.

23. Any response to this action should be mailed to:

#### **Mail Stop Amendment**

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**or faxed to:**

(571) 273-8300, (for both formal communications intended for entry and for informal or draft communications, but please label informal fax as "PROPOSED" or "DRAFT")

Patent Correspondence delivered by hand or delivery services, other than the USPS, should be addressed as follows and brought to U.S. Patent and Trademark Office, Customer Service Window, **Mail Stop Amendment**, Randolph Building, 401 Dulany Street, Alexandria, VA 22314

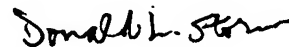
24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald L. Storm, of Art Unit 2654, whose telephone number is




(571) 272-7614. The examiner can normally be reached on weekdays between 8:00 AM and 4:30 PM Eastern Time. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571) 272-7602.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Inquiries regarding the status of submissions relating to an application or questions on the Private PAIR system should be directed to the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028 between the hours of 6 a.m. and midnight Monday through Friday EST, or by e-mail at: [ebc@uspto.gov](mailto:ebc@uspto.gov). For general information about the PAIR system, see <http://pair-direct.uspto.gov>.

September 20, 2005

  
Donald L. Storm  
Patent Examiner  
Art Unit 2654

  
RICHEMOND DORVIL  
SUPERVISORY PATENT EXAMINER